

**AMENDMENTS TO THE DRAWINGS:**

The attached drawing include changes to FIG.1. The sheet containing FIG. 1 replaces the original sheet including FIG. 1. In FIG. 1 a Mass Flow Controller 71 and a pair of control valves 73 have been added.

## **REMARKS**

### **INTRODUCTION**

In accordance with the foregoing, the specification, drawings and claims 1, 4, 5, 11, 14 and 20 have been amended. Claims 2, 3, 6-10, 12, 13 and 16-19 have been cancelled. Claims 21-29 have been withdrawn. Claims 1, 4, 5, 11, 14, 15 and 20 are pending and under consideration.

### **OBJECTION TO THE DRAWINGS**

The drawings were objected to for failing to show the following features recited in the claims: "gas distributor plate," "upper central zone," "upper edge zone," "lower central zone," "lower edge zone," "planar side" and "control valve."

Regarding "gas distributor plate," the specification has been amended to change "gas distributor 24" to "gas distributor plate 24" and is now consistent with the claims and drawings.

Regarding "upper central zone," the claims have been amended to recite "first central zone" and is now consistent with the specification and drawings.

Regarding "upper edge zone," the claims have been amended to recite "first edge zone" and is now consistent with the specification and drawings.

Regarding "lower central zone," the claims have been amended to recite "second central zone" and is now consistent with the specification and drawings.

Regarding "lower edge zone," the claims have been amended to recite "second edge zone" and is now consistent with the specification and drawings.

Regarding "planar side," this term has been cancelled from the claims.

Regarding "control valve," appropriate correction has been made to Figure 1 and the specification, specifically in paragraph [0043].

### **CLAIM REJECTIONS – 35 USC 112**

Claims 1-20 were rejected under 35 USC 112, first and second paragraphs, as failing to comply with the written description requirement for failing to enumerate the following features recited in the claims: "gas distributor plate," "upper central zone," "upper edge zone," "lower central zone," "lower edge zone" and "planar side." Claims 1-20 were further rejected under 35 USC 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of the following elements: "gas distributor plate," "upper central zone," "upper edge

zone," "lower central zone," "lower edge zone" and "planar side." As previously discussed, appropriate correction has been made to the claims, drawings and specification where required.

Claims 1-4 and 20 were further rejected under 35 USC 112, second paragraph, as being indefinite. Claims 2 and 3 have been cancelled. Appropriate correction has been made to claims 1, 4 and 20.

Withdrawal of the foregoing rejections is requested.

#### **CLAIM REJECTIONS – 35 USC 102**

Claims 1-4 and 6-19 were rejected under 35 USC 102(b) as being anticipated by Dhindsa et al. (US 6,245,192) (hereinafter "Dhindsa").

Dhindsa discusses a gas distribution apparatus for semiconductor processing. In one embodiment of Dhindsa, an upper baffle plate 56A includes radially extending channels 70 which distribute gas from the generally centrally located first gas supply 60 to the periphery of the upper baffle plate 56A. The channels 70 are defined between contact surfaces 72 which contact the bottom surface 36 of the support plate 20. Heat and electric current flows from the upper baffle plate 56A to the support plate 20 through the surfaces 72. Similarly, the top surface of the lower baffle plate 56B includes radially extending channels 74 which distribute gas from the peripherally located manifold 66 to an annular channel 76 in a central part of the lower baffle plate 56B. The radially extending channels 74 are defined between contact surfaces 78 which thermally and electrically contact the upper baffle plate 56A. Although the channels 70, 74 and 76 are shown in the upper surfaces of the upper and lower baffles, they could also be formed in lower surfaces of the support plate 20 and upper baffle plate. Dhindsa, 5:21-5:37 and Figure 4.

Amended claim 1 recites: "...a first loop-type partition wall formed in the first gap between the gas supplier and the gas distributor plate, the first loop-type partition wall forming a first central zone and a first edge zone, the first central zone being connected to the first gas supply hole and the first edge zone being connected to the second supply hole..." Support for this amendment may be found in at least original claims 2 and 3, paragraphs [0026] – [0032] of the specification, and Figures 1, 3 and 4. In contrast to claim 1, Dhindsa does not discuss a loop-type partition wall formed between the gas supplier and the gas distributor plate. In the Office Action, the Examiner relies on the "vertical wall of 78" to supply this feature of claim 1. Component 78 of Dhindsa, designating a contact surface, by definition can have no wall because in Dhindsa the upper and lower baffle plates 56A and 56B are designed to be in contact with each other. As such, no wall is provided in Dhindsa as is recited in claim 1.

Regarding the channels 74 of Dhindsa, they intersect and divide the baffle plates and are not, nor define, a loop-type partition wall as recited in claim 1.

Claims 4, 11, 14 and 15 depend on claim 1 and are therefore believed to be allowable for at least the foregoing reasons.

Withdrawal of the foregoing rejection is requested.

#### **CLAIM REJECTIONS – 35 USC 103**

Claims 5 and 20 were rejected under 35 USC 103(a) as being unpatentable over Dhindsa and Okayama et al. (US 6,334,983) (hereinafter "Okayama").

Claims 5 and 20 depend on claim 1 and are therefore believed to be allowable for at least the foregoing reasons. Further, claims 5 and 20 recite features that patentably distinguish over Dhindsa and Okayama, taken alone or in combination. For example, claim 5 recites that a plurality of gas distributor plates are provided between the gas suppliers and the showerhead.

Withdrawal of the foregoing rejection is requested.

#### **CONCLUSION**

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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